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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,879	07/27/2006	Tarek Ibrahim	17517RRUS03N	3516

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Dallas, TX 75380

EXAMINER	
JAMA, ISAAK R	
ART UNIT	PAPER NUMBER
2617	
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12/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,879	IBRAHIM ET AL.	
	Examiner	Art Unit	
	ISAAK R. JAMA	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/2009 has been entered.

2. Claims 1-13 are currently pending in the Application.

Response to Arguments

Applicant's arguments filed 10/30/2009 have been fully considered but they are not persuasive. Regarding Applicants argument that the U.S. filing date of the Friday reference is July 15, 2005, and which claims an effective priority date of February 18, 2005 (by its claim of priority to US provisional application 60/654,621). The instant application has a filing date of December 16, 2005, but has an effective priority date of December 16, 2004 - which is earlier than the priority date of the Friday reference. Therefore, the Friday reference is unavailable as prior art against the instant application. For reference, Applicant directs the Examiner's attention to Applicant's US Provisional Patent Application Serial No. 601636,741, particularly pages 38-39 and 1-5, which describe the client/terminal receiving a roaming candidate list from an access point. Therefore, the roaming candidate list feature/element as recited in the claims has

priority to at least December 16, 2004. The Examiner concurs with the Applicants statement, but the Examiner would like to remind the Applicant that (and as outlined in the Advisory Action mailed on 08/31/2009) U.S. Patent Application Publication 2006/0187873 to Friday being unavailable as a prior art against the instant Application; indeed it is, because the Provisional Application Number 60/636,741 that which the instant Application claims priority to has a different set of inventors namely, William R. Douglass, Tom Jencz, Lisa Schwartz, Frank Burke and Ionnis Apostolakos while the inventors of the current Application are Tarek Ibrahim, John Brancato and John Bongiorno. And the request to correct inventorship in the provisional application which was filed on 8/5/09 is submitted after the prosecution has closed; in addition, the request to correct inventorship in the provisional application have not been approved, therefore, until such time the petition is approved, the provisional application is not a priority document for the current application. And because the Applicant filed a response to the advisory prior to receiving a judgment on the Applicants request for the priority acknowledgement, Examiner had no choice but to resond to the outstanding action.

Hence, Examiner maintains the rejection and arguments of Advisory of 08/31/2009 and the final action of 05/05/2009.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 7,164,915 (Zaki) in view of U.S. Patent Application Publication Number 2006/0187873 (Friday et al.)

5. As to claims 1, 2, 8 Zaki teaches a method of hand-off for a mobile terminal from a first access point to a second access point in a wireless local area network (WLAN) **[Title]**, the method comprising: measuring in a mobile terminal signal to noise ratio (SNR) of first RF signals received from the first access point **[Figure 2, step S32, column 2, lines 34-36]**; if the measured SNR of the first RF signals exceeds a first threshold **[Column 3, lines 20-26]**, measuring SNR of RF signals received from a plurality of candidate access points in a roaming candidate list stored on the mobile terminal; determining from measured SNRs of the candidate access points whether any of the measured SNR exceed a second threshold **[Column 3, lines 17-18; i.e. low SNR threshold]**, and if so, identifying those candidate access points in a new association list; selecting one of the candidate access points in the new association list; and attempting to associate the mobile terminal to the selected candidate access point **[Column 3, lines 50-64]**. But Zaki does not specifically disclose that receiving from the first access point the roaming candidate list identifying the plurality of candidate access points in the WLAN. Friday teaches a pre-emptive roaming mechanism allowing for enhanced Qos in wireless network environments **[Title]**, whereby a when an access element (AP) receives an association request from a wireless client (mobile terminal) it

tunnels the association request to central control element. The central control element stores, in association with an identifier (e.g., MAC address) of the wireless client, a list of access elements that either detected the wireless client (e.g., by detecting a probe request) or a list of access elements detected by the wireless client provided in the association request **[Page 6, paragraph 0061]**, and that the central control element adds a computed roaming list to the association response and transmits the association response to the client **[Page 7, paragraph 0063]**. In addition and in regard to claims 2 and 8, Friday further teaches a method further comprising: associating the mobile terminal to the first access point in the WLAN **[Page 4, paragraph 0042; i.e. in the preemptive roaming mode, the client obtains a roaming candidate list in the association response packet when it associates to an access point]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Friday in the handover system of Zaki in order to reduce the latency associated with roaming in wireless networks.

6. As to claim 3, Zaki further teaches a mobile terminal operable for wireless connection to one or more access points in a wireless local area network (WLAN) **[Figure 1, # 14_{1N} and #s 10_1 and 10_2]**, the device comprising: means for measuring signal to noise ratio (SNR) of first RF signals received from the first access point **[Figure 2, step S32, column 2, lines 34-36]**; if the measured SNR of the first RF signals exceeds a first threshold **[Column 3, lines 20-26]**, means for measuring SNR of RF signals received from each of a plurality of candidate access points in a roaming candidate list; means for determining from measured SNRs of the candidate access

points whether any of the measured SNR exceed a second threshold, and if so, identifying those candidate access points in a new association list; means for selecting one of the candidate access points in the new association list; and means for attempting to associate the mobile device to the selected candidate access point **[Column 3, lines 50-64]**. But Zaki does not specifically disclose that receiving from the first access point the roaming candidate list identifying the plurality of candidate access points in the WLAN. Friday teaches a pre-emptive roaming mechanism allowing for enhanced Qos in wireless network environments **[Title]**, whereby a when an access element (AP) receives an association request from a wireless client (mobile terminal) it tunnels the association request to central control element. The central control element stores, in association with an identifier (e.g., MAC address) of the wireless client, a list of access elements that either detected the wireless client (e.g., by detecting a probe request) or a list of access elements detected by the wireless client provided in the association request **[Page 6, paragraph 0061]**, and that the central control element adds a computed roaming list to the association response and transmits the association response to the client **[Page 7, paragraph 0063]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Friday in the handover system of Zaki in order to reduce the latency associated with roaming in wireless networks.

7. As to claim 4, Zaki teaches a mobile terminal in accordance with claim 3 further comprising: means for associating the mobile terminal to a first access point in the WLAN **[Column 2, lines 31-36]**.

8. As to claim 7, Zaki teaches a mobile terminal for communicating with one or more access points in a wireless local area network (WLAN) **[Figure 1, # 14_{1N} and #s 10_1 and 10_2]**, the device comprising: a processor **[Figure 3, # 24]**; a transceiver coupled to the processor **[Figure 3, # 22]**; an antenna coupled to the transceiver for receiving and transmitting RF signals from and to the one or more access points in the WLAN **(Figure 3, # 20]**; and wherein the processor is operable for: measuring signal to noise ratio (SNR) of first RF signals received from the first access point **[Figure 3, # 24, column 3, lines 52-53]**, if the measured SNR of the first RF signals exceeds a first threshold **[Column 3, lines 20-26]**, measuring SNR of RF signals received from each of a plurality of candidate access points in a roaming candidate list stored in the mobile terminal, determining from measured SNRs of the candidate access points whether any of the measured SNR exceed a second threshold **[Column 3, lines 17-18, i.e. low SNR threshold]**, and if so, identifying those candidate access points in a new association list, selecting one of the candidate access points in the new association list, and attempting to associate the mobile device to the selected candidate access point **[Column 3, lines 50-64]**. But Zaki does not specifically disclose that receiving from the first access point the roaming candidate list identifying the plurality of candidate access points in the WLAN. Friday teaches a pre-emptive roaming mechanism allowing for enhanced Qos in wireless network environments **[Title]**, whereby a when an access element (AP) receives an association request from a wireless client (mobile terminal) it tunnels the association request to central control element. The central control element stores, in association with an identifier (e.g., MAC address) of the wireless client, a list

of access elements that either detected the wireless client (e.g., by detecting a probe request) or a list of access elements detected by the wireless client provided in the association request **[Page 6, paragraph 0061]**, and that the central control element adds a computed roaming list to the association response and transmits the association response to the client **[Page 7, paragraph 0063]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Friday in the handover system of Zaki in order to reduce the latency associated with roaming in wireless networks.

9. Regarding claims 10, 11 and 13, Zaki further teaches ranking the candidate access points in the new association list based at least in part by access point load information **[Column 2, lines 37-40; i.e. The other system statistics may relate to the quality of service, such as delay bounds, bandwidth requirements (i.e. data rate), and frame error rate. In addition, an Access Point that cannot sustain any of the aforementioned QoS maybe construed as among other issues over-loaded]**.

10. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 7,164,915 (Zaki) in view of U.S. Patent Application Publication Number 2006/0187873 (Friday et al.) and further in view U.S. Patent Publication Number 2005/0138178 (Astarabadi)

11. As to claims 5 and 6, Zaki teaches a mobile terminal in a wireless area network, in which the mobile terminal is associated with a first access point in the network **[Abstract]**, and signal to noise ratio (SNR) of first RF signals received from the first access point is measured **[Figure 2, step S32, column 2, lines 34-36]**; wherein a SNR

of RF signals received from a plurality of candidate access points in a roaming candidate list are measured and it is determined from measured SNRs of the candidate access points whether any of the measured SNRs exceeds a second threshold **[Column 3, lines 17-18; i.e. low SNR threshold]**, and if so, identifying those candidate access points in a new association list, the state machine transitioning from the first state to the second if the measured SNR of the first RF signals exceeds a first threshold **[Column 3, lines 20-26]**; a third state in which one of the candidate access points in the new association list is selected and an attempt is made to associate the mobile terminal to the selected candidate access point, the state machine transitioning from the second state to the third state if there is at least one candidate access point in the new association list **[Column 3, lines 50-64]**. And Astarabadi discloses a wireless mobility management system and method for identifying a group of wireless access points **[Abstract]**, and that prior to communicating data, wireless stations establish an association with their corresponding access points **[Page 3, paragraph 0033]**, and that a wireless station listens for beacons to identify APs within its communication range. After identifying AP, the wireless station and the AP may perform a mutual authentication by exchanging several management frames as part of the process. After successful authentication, the wireless station moves into the second state, authenticated and unassociated. Moving from the second state to the third and final state **[i.e. fourth state]**, authenticated and associated, involves the wireless station sending an association request frame and the AP responding with an association response frame **[Page 3, paragraph 0034]**. But, Zaki and Astarabadi fail to disclose

that wherein the roaming candidate list identifying the plurality of candidate access points in the WLAN is received from the first access point. Friday teaches a pre-emptive roaming mechanism allowing for enhanced Qos in wireless network environments **[Title]**, whereby a when an access element (AP) receives an association request from a wireless client (mobile terminal) it tunnels the association request to central control element. The central control element stores, in association with an identifier (e.g., MAC address) of the wireless client, a list of access elements that either detected the wireless client (e.g., by detecting a probe request) or a list of access elements detected by the wireless client provided in the association request **[Page 6, paragraph 0061]**, and that the central control element adds a computed roaming list to the association response and transmits the association response to the client **[Page 7, paragraph 0063]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Friday in the combined system of Zaki and Astarabadi in order to reduce the latency associated with roaming in wireless networks.

12. Regarding claim 12, Zaki further teaches that the state machine in accordance with Claim 5 wherein the new association list is ranked based at least in part by access point load information. **[Column 2, lines 37-40; i.e. The other system statistics may relate to the quality of service, such as delay bounds, bandwidth requirements (i.e. data rate), and frame error rate. In addition, an Access Point that cannot sustain any of the aforementioned QoS maybe construed as among other issues over-loaded]**.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 7,164,915 (Zaki) in view U.S. Patent Publication Number 2005/0138178 (Astarabadi) and further in view of Alternative Wireless (Davi).

14. As to claim 9, Zaki teaches a wireless local area network (WLAN), the WLAN comprising: a plurality of sets of access points operable for communicating wirelessly with one or more remote client devices **[Figure 1, # 14_{1N} and #s 10_1 and 10_2]**. But Zaki fails to teach that each set of access points defines a cell having a predefined communication coverage area within the WLAN; a plurality of switches communicatively coupled to access points; and the access points in a first cell are operable for transmitting a roaming candidate list to a mobile device associated with one of the access points in the first cell, the list identifying one or more neighborhood access points. Astarabadi teaches that each access point defines a cell having a predefined communication coverage area within the WLAN **[Figure 5, AP1-AP4]**, and a plurality of switches coupled to the access points **[Figure 5, N1 and N2]**, and that the access points in a first cell are operable for transmitting a roaming candidate list to a mobile device associated with one of the access points in the first cell, the list identifying one or more neighborhood access points **[Figure 2, # 450, Figure 3, # 468; column 3, paragraph 0041]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Astarabadi in the handover system of Zaki in order to manage the network by dividing into cells, and facilitate seamless handoffs. But neither Zaki nor Astarabadi disclose that the communication coverage area of each defined cell is less than about 1000 square feet.

Davi discloses indoor wireless networks constitute picocells, and that picocell coverage is in the order of 150 to 1000 square feet **[Column 1, lines 5-12]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Davi into the combined system of Zaki and Astarabadi in order to implement the network in smaller area such as sporting arenas or lecture halls.

Conclusion

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISAAK R. JAMA whose telephone number is (571)270-5887. The examiner can normally be reached on Monday-Thursday; 4-10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IRJ/

/LESTER KINCAID/

Supervisory Patent Examiner, Art Unit 2617